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Application No.	10/620,248	Prepared by	Lois Stone	Tracking Number	5907967
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a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449			
b. Applicant(s)	g. Disclaimer	I. Print Fig.	q. PTOL-85b			
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract			
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs			
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other			

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use for a periscope is in a submarine. Here the person, situated below the surface of the water can nevertheless see above the water surface. This is accomplished because what the person is seeing are hundreds of incident light rays entering the part of the periscope above the water, reflecting off of a mirror panel also above the water, to a mirror panel near the person, below the water (i.e., offset in position from the mirror panel above the water), which is then reflected to the person's eye. While most common periscope usage does not require exacting parallelism between the incident and reflected rays, there are many uses of periscopes that do require such exacting parallelism.

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Even retroreflectors, lateral transfer retroreflectors and periscopes made of highly flat mirror panels can lose the parallelism between the incident and reflected light rays, i.e., their accuracy, if they are exposed to physical stresses. Typical examples of the types of stresses that can reduce the accuracy of one of these devices are mass, thermal expansion and contraction of the substrate material from which the assembly of the parts of the device are made, or even deflection of the reflective surfaces during the process of curing the adhesive which typically joins members of the device to each other; i.e., as the adhesive dries, it shrinks and thereby causes pulling stresses to be exerted upon the various elements of the device. If the accuracies of the device are needed to be extremely high (in the range of <u>0.0001</u> degrees of deflection between the incident and reflected rays), then even the smallest of the above stresses causing deflection of the reflective surface of one of the mirror panels will be unacceptable.

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As indicated, retroreflectors, lateral transfer retroreflectors and periscopes are old in the art. Examples of prior art retroreflectors and lateral transfer retroreflectors are described in the following patents:

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U.S. Pat. No. 3,977,765 to Lipkins, discloses a retroreflector mounted to a support structure through means of applying an adhesive into the joints formed between joined members of the retroreflector and the support structure.